SERVICE MANUAL

SANYO

PORTABLE CASSETTE RECORDER

M2511E

EUROPE

141 804 11

SPECIFICATIONS

Power Source	
AC	220 V (50/60Hz)
DC	7.5V (HP 11, C Cell, Babyzellen, R14) x 5
Output Power	1.0 W (maximum)
Power Consumption	5 W
Current Consumption (at VR min)	
Recording mode	150 mA
Playback mode	130 mA
Fast Forward mode	210 mA
Rewind mode	210 mA
Recording System	DC Bias
Erasing System	DC Erasing
Tape Speed	4.75 cm/sec ±3%
Fast Forward Time	140 sec. (C-60 cassette)
Rewind Time	140 sec. (C-60 cassette)
Wow & Flutter	0.3% RMS
Frequency Response	125 – 8 k Hz
Signal to Noise Ratio	Better than 30 dB
Crosstalk	
Track to Track	Better than 40 dB
Distortion (3rd harmonic)	10%
Terminal Impedance	
MIC	4.7 k-ohm
DIN INPUT	0.1 – 2 mV/k-ohm
DIN OUTPUT	Adjustable
EXT. Speaker	8 ohm

–Specifications subject to change without notice.–

WM-3453

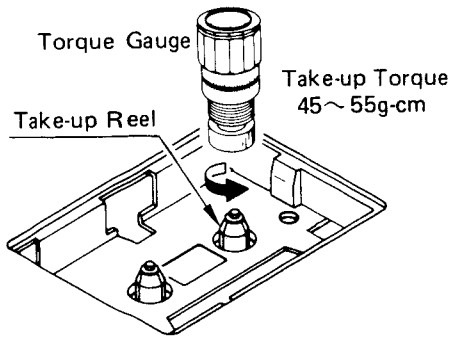
MECHANICAL ADJUSTMENTS

GENERAL REMARKS

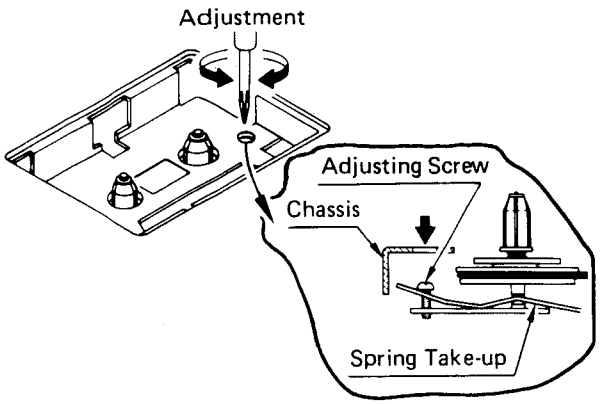
Before adjusting the mechanism of the unit, wipe the tape contact surfaces clean as well as the contact surfaces of the driving parts with a soft cloth soaked in alcohol.
Trouble may occur because of oil and grease stains.

TAKE-UP TORQUE ADJUSTMENT

1. Open the cassette compartment lid.
2. Measure the torque of the Take-up Reel with a torque gauge in the playback mode.
   It should be 45 – 55g-cm.



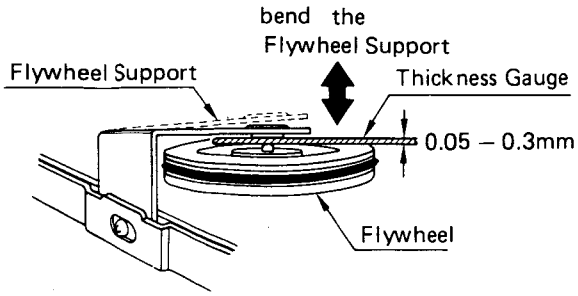
3. If necessary, adjust the torque by turning the adjusting screw as illustrated.



4. After the adjustment, secure the screw with paint or glue.

FLYWHEEL SUPPORT ADJUSTMENT

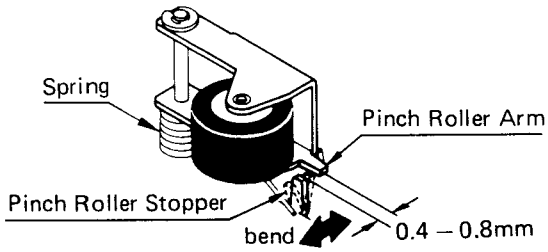
1. Turn the chassis upside down and measure the clearance between the Flywheel Support and the Flywheel.
   It should be 0.05 – 0.3mm.



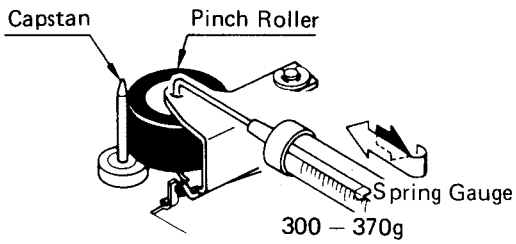
2. If necessary, adjust the clearance by bending the Flywheel Support as illustrated.

PINCH ROLLER ADJUSTMENT

1. The clearance between the Pinch Roller Stopper and the Pinch Roller Arm should be 0.4 – 0.8mm with the unit in the playback mode.
   * If necessary, adjust the clearance by bending the Stopper as illustrated.



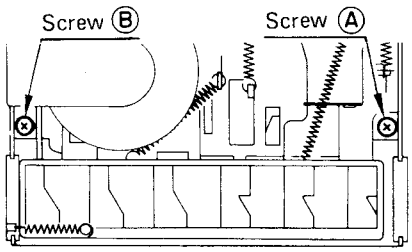
2. Measure the pinch roller pressure with a spring gauge (500g) in the playback mode by the following procedure.
   * Hook the gauge to the Pinch Roller and pull it away from the Capstan as illustrated. Then, measure the pressure the moment the Pinch Roller comes in contact with the Capstan again and the Pinch Roller starts rotating.



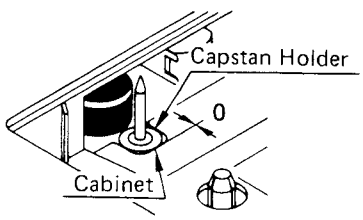
3. If necessary, adjust the pressure by bending the spring or replace it with a new one.

INSTRUCTION FOR CHASSIS MOUNTING

1. Whenever the Chassis is mounted on the Cabinet, tighten the screws (A) and (B) in that order as illustrated.



2. When tightening the screws, be careful not to leave clearance between the Cabinet and the Capstan Holder as illustrated.

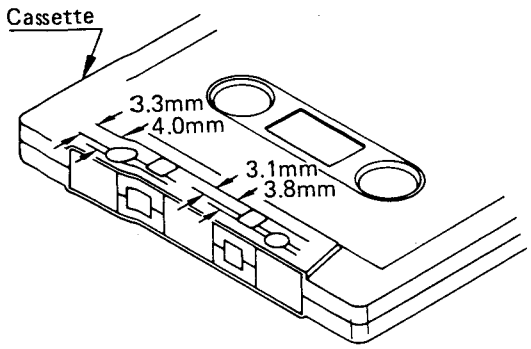


3. If there be clearance after the Chassis is mounted on the Cabinet, it will be impossible to measure the head position correctly.

MECHANICAL ADJUSTMENTS (Continued)

HEAD POSITION ADJUSTMENT

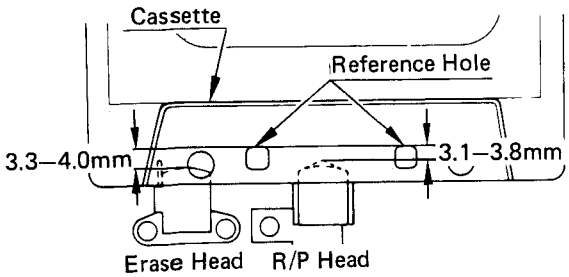
NOTE:
A cassette with the reference lines drawn on it, as shown, can be used as a facilitating gauge for the head position adjustment.
(Do not use a worn cassette.)



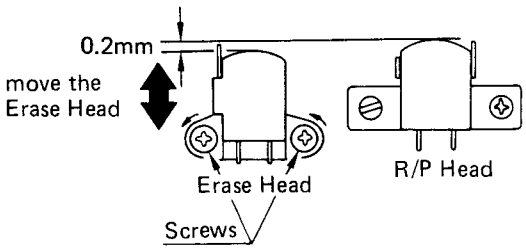
If a head has been replaced or disassembled, adjust its position by the following procedure.

1. Insert the above described cassette into the unit and set the unit in the playback mode.
2. The distances from the reference holes on the cassette to each head should be as follows:

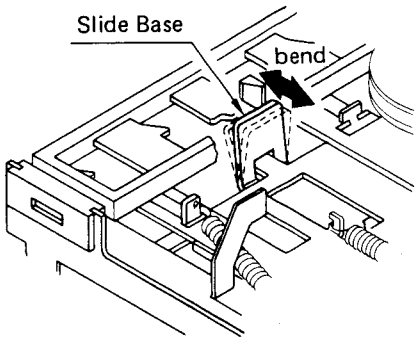
To R/P Head	3.1 – 3.8mm
To Erase Head	3.3 – 4.0mm



3. If necessary, remove the Chassis from the Cabinet.
4. Loosen the screws fastening the Erase Head and shift it 0.2mm away from the R/P Head as illustrated.



5. Retighten the screws and mount the Chassis again on the Cabinet following Instruction for Chassis Mounting.
6. If necessary, adjust the head positions by bending the Slide Base as illustrated.



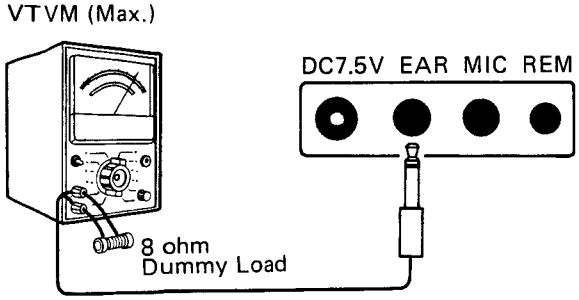
7. After the adjustment, secure the fastening screws with paint or glue to prevent them from loosening.

ELECTRICAL ADJUSTMENTS

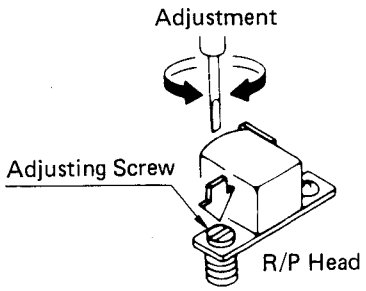
HEAD AZIMUTH ADJUSTMENT

After the R/P Head has been replaced or disassembled, its head azimuth should be adjusted by the following procedure.

1. Connect a VTVM with an 8 ohm dummy load to the earphone jack as illustrated and play back a 6.3 kHz test tape.



2. Turn the azimuth adjusting screw to obtain the maximum reading on the VTVM.



3. After the adjustment, secure the screw with paint or glue.

PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 6 1419 36601	Individual Carton	1
	141 6 1449 39500	Styrofoam Case	1
	141 6 1449 39600	Styrofoam Case	1
	141 6 2519 08018	Poly Cover	1
	141 6 2519 22034	Poly Cover	1
	141 6 2519 24036	Poly Cover	1
	141 6 4559 00100	Serial No. Sheet	2
	ACCESSORIES		
	4 2419 73810	Cassette Assy	1
	4 2439 70310	Power Cord	1
	141 2 1819 09600	Carrying Case	1
	141 6 4119 78900	Instruction Book	1
	141 6 4729 05800	Caution Label	1
	CABINET		
	4 1519 70154	Speaker (8 ohm)	1
S4	4 2319 71490	Leaf Switch (Power Switch)	1
J2	4 2359 70970	DIN Socket 5P	1
	4 2359 72800	AC Socket	1
T1	4 2519 71471	Power Transformer	1
	4 5279 70790	Motor	1
	141 0 1119 32913	Cabinet Bottom Assy	1
	141 0 1119 47201	Cabinet Top Assy	1
	141 0 1719 06400	Handle Assy	1
	141 2 1249 15600	Cassette Lid	1
	141 2 1339 13500	Battery Lid	1
	141 2 3679 20100	AC Socket Bracket	1
	141 2 3679 23300	DIN Bracket	1
	141 2 3729 00700	Fix Speaker Bracket	1
	141 2 3829 11902	Battery Terminal	1
	141 2 3829 11906	Battery Terminal	1
	141 2 3829 16101	Battery Terminal	1
	141 2 3829 18500	Battery Terminal	1
	141 2 4419 07200	Cassette Lid Cushion	5
	141 2 4469 10400	Speaker Cushion	2
	141 2 4469 14900	Battery Lid Cushion	1
	141 2 4469 15103	Cushion	1
	141 2 4469 17300	Cushion	1
	141 2 4469 17400	Cushion	1
	141 2 4469 19100	Cushion	1
	141 2 4569 06400	Washer	2
	141 2 4729 03400	Lug	1
	141 2 7319 21101	Switch Plate	1
	141 2 8419 06800	Interlock Lever	1
	141 2 8519 48000	Spring, Interlock	1
	141 2 8519 48400	Spring, Switch Plate	1
R19		Carbon 2.2k ohm 1/4W ±5%	1
R20		Metal 10 ohm 1W ±5%	1
		Screw, Pan Hd. +M2.6x6	1
		Screw, Pan Hd. Tapping-2 +M2.6x8	2
		Screw, Pan Hd. Tapping-2 +M2.6x16	2
		Screw, Pan Hd. Tapping-2 +M3.0x8	1
		Screw, Pan Hd. Tapping-2 +M3.0x10	2
		Screw, Pan Hd. Tapping-2 +M3.0x12	3
		Screw, Bind Hd. Tapping-2 +M2.0x6	2
		Screw, Bind Hd. Tapping-2 +M2.0x8	2
		Nut-1 M2.6	1
		Small Round Washer M3.0	2
		Finished Washer M2.0	1
	141 2 3229 15200	Shield Plate	1
		Screw, Pan Hd. +M2.6x8	1
		Finished Washer M2.6	1
		Washer M3.1x8.0x1.0	1
	AMP P.C.B. ASSY		
	4 1329 72112	Amplifier P.C.B. Assy	1
C1		Mylar 0.047MF 50V ±10%	1
C2		Ceramic 0.022MF 50V +80, −20%	1
C3		Electrolytic 330MF 6.3V	1

Ref. No.	Part No.	Description	Q'ty
	AMP P.C.B. ASSY		
C4		Electrolytic 1MF 10V	1
C5		Ceramic 0.0022MF 50V ±10%	1
C6		Electrolytic 1MF 10V	1
C7		Mylar 0.1MF 50V ±10%	1
C8		Electrolytic 1MF 10V	1
C9		Ceramic 0.001MF 50V ±10%	1
C10		Electrolytic 100MF 10V	1
C11		Electrolytic 47MF 10V	1
C12		Electrolytic 22MF 10V	1
C13		Ceramic 220PF 50V ±10%	1
C14		Electrolytic 0.47MF 10V	1
C15		Electrolytic 220MF 6.3V	1
C16		Electrolytic 220MF 10V	1
C17		Electrolytic 1500MF 10V	1
C18		Electrolytic 100MF 6.3V	1
C19		Ceramic 0.0015MF 50V ±10%	1
C20		Ceramic 0.0022MF 50V ±10%	1
D1		Diode, DS448	1
D2		Diode, DS17	1
D3		Diode, DS18	1
	4 2359 70910	Fuse Holder	2
	4 2349 70040	Fuse (0.5 mAT)	1
IC1		IC, LA4101A	1
J1	4 2359 71800	Jack 4P (Mike, Ear, Rem, Ext. Power)	1
	141 2 1639 12800	Volume Knob	1
Q1		Transistor, 2SC693	1
Q2		Transistor, 2SC536	1
R1		Carbon 4.7k ohm 1/4W ±5%	1
R2		Carbon 2.2k ohm 1/4W ±5%	1
R3		Carbon 4.7k ohm 1/4W ±5%	1
R4		Carbon 1M ohm 1/4W ±5%	1
R5		Carbon 15k ohm 1/4W ±5%	1
R6		Carbon 47 ohm 1/4W ±5%	1
R7		Carbon 1.8k ohm 1/4W ±5%	1
R8		Carbon 8.2k ohm 1/4W ±5%	1
R9		Carbon 1.8k ohm 1/4W ±5%	1
R10		Carbon 10 ohm 1/4W ±5%	1
R11		Carbon 3.9k ohm 1/4W ±5%	1
R12		Carbon 1k ohm 1/4W ±5%	1
R13		Carbon 47 ohm 1/4W ±5%	1
R14		Carbon 4.7 ohm 1/4W ±5%	1
R15		Carbon 220 ohm 1/4W ±5%	1
R16		Carbon 27k ohm 1/4W ±5%	1
R17		Carbon 68k ohm 1/4W ±5%	1
R18		Carbon 6.8k ohm 1/4W ±5%	1
S1	4 2319 72850	Slide Switch (Record/Play Switch)	1
	4 2229 70850	Volume Control (Volume, D-50k)	1
		Screw, Oval Hd. +M2.0x5	1
	GOVERNOR P.C.B. ASSY		
	4 2869 70330	Governor P.C.B. Assy	1
R101		Carbon 560 ohm 1/4W ±5%	1
R102		Carbon 560 ohm 1/4W ±5%	1
R103		Carbon 300 ohm 1/4W ±5%	1
R104		Carbon 180 ohm 1/4W ±5%	1
R105		Carbon 470 ohm 1/4W ±5%	1
R106		Carbon 2.4 ohm 1/4W ±5%	1
R107		Carbon 390 ohm 1/4W ±5%	1
Q101		Transistor, 2SB185	1
Q102		Transistor, 2SD400	1
D101	4 2029 70110	Diode, 1S1210	1
TH101		Thermister, SDT100	1
P101	4 2229 72780	Potentiometer (B-350)	1
L101	4 2539 70030	RF Choke	1
C101		Ceramic 0.02MF 50V +80, −20%	1
	MECHANISM		
	4 2429 70370	Erase Head	1
	4 2429 71120	R/P Head	1
	141 0 3119 13501	Chassis Assy	1

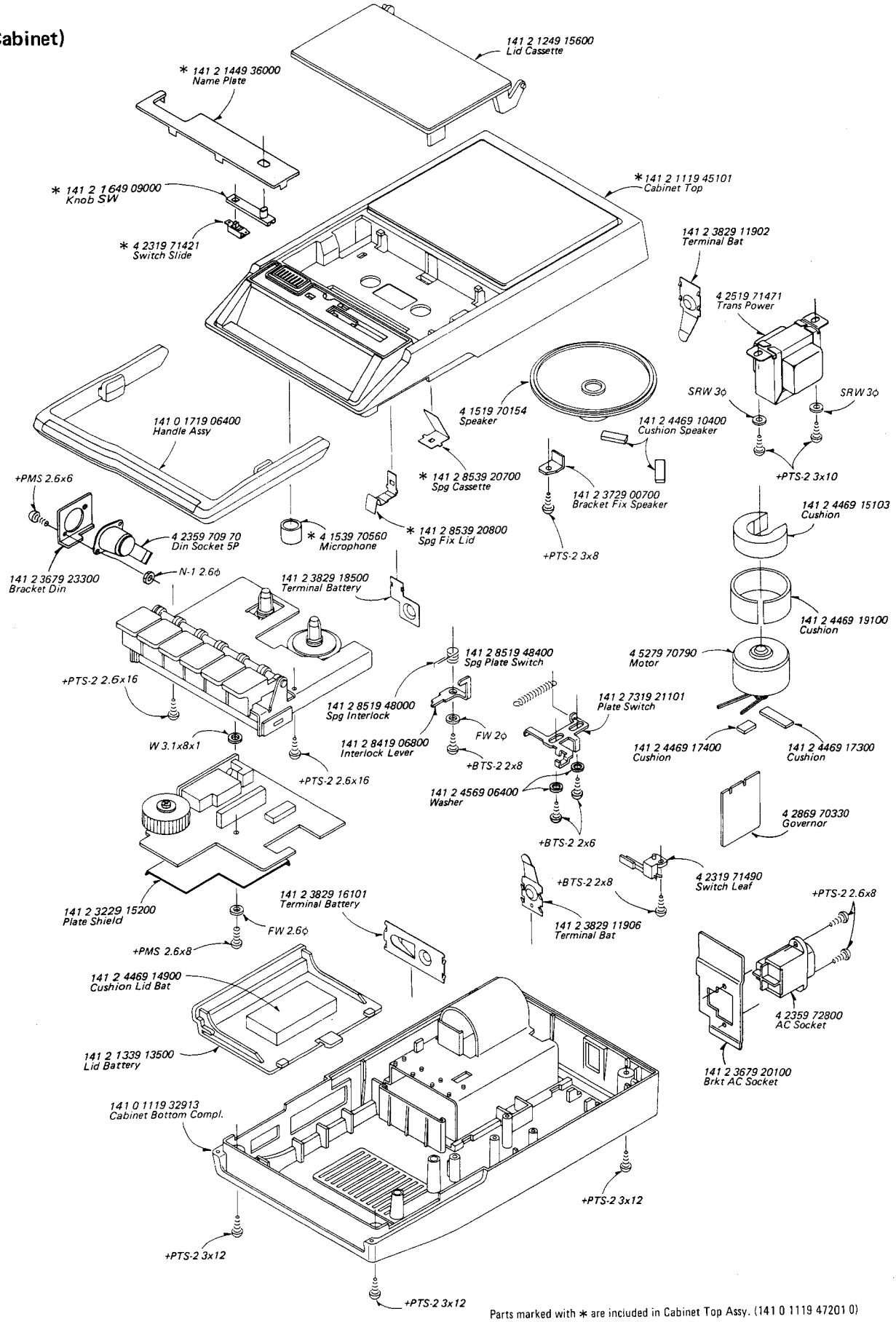
PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
	141 0 3519 07500	Flywheel Support Assy	1
	141 0 5219 03700	Flywheel Complete	1
	141 0 5319 02501	Take-up Pulley Assy	1
	141 0 5419 02200	Pinch Roller Assy	1
	141 0 5559 01700	Rewind Arm Assy	1
	141 0 5559 01800	F. FWD Arm Assy	1
	141 0 5559 04201	Record Arm Assy	1
	141 0 7419 11800	Sensor Plate Assy	1
	141 2 1619 41500	Select Button, Record	1
	141 2 1619 41600	Select Button, Rewind	1
	141 2 1619 41700	Select Button, Play	1
	141 2 1619 41800	Select Button, F.F.	1
	141 2 1619 41900	Select Button, Stop	1
	141 2 1619 42000	Select Button, Eject	1
	141 2 3519 24900	Stop Lever Bracket	1
	141 2 3529 11700	Spacer, Stop	1
	141 2 4219 02900	Screw	1
	141 2 4219 06300	Screw	1
	141 2 4539 06900	Washer	1
	141 2 4539 08200	Washer	1
	141 2 4539 12100	Washer, Spindle	3
	141 2 4619 01800	Tube	1
	141 2 4729 00100	Lug	1
	141 2 5319 03201	Take-up Reel	1
	141 2 5319 03300	Supply Reel	1
	141 2 5559 04000	Lock Plate	1
	141 2 5649 06300	Drive Belt	1
	141 2 5649 07500	Capstan Belt	1
	141 2 5729 09700	Capstan Holder	1
	141 2 6129 02500	Button Spindle	1
	141 2 7319 20302	Slide Base	1
	141 2 7319 20600	Lock Plate	1
	141 2 7319 24700	Guide Lock	1
	141 2 7319 24701	Guide Lock	1
	141 2 7419 29200	Stop Lever	1
	141 2 7419 30601	Eject Lever	1
	141 2 8519 06900	Spring, Pushout Cassette Plate	1
	141 2 8519 29400	Spring, Stop Lever	1
	141 2 8519 47400	Spring, Head	1
	141 2 8519 47500	Spring, Stop Lever	1
	141 2 8519 47600	Spring, Lock Plate	1
	141 2 8519 47700	Spring, Stop	1
	141 2 8519 47900	Spring, Pinch Roller	1
	141 2 8519 48100	Spring, Eject Lever	1
	141 2 8519 48200	Spring, Slide Base	1
	141 2 8519 48300	Spring, F. FWD Arm	1
	141 2 8519 63500	Spring, Rewind Arm	1
	141 2 8519 64200	Spring, Play Button	1
	141 2 8539 19502	Spring, Take-up	1
		Screw, Cylinder Hd. -M2.0x8	1
		Screw, Pan Hd. Tapping-2 +M2.6x6	1
		Screw, Pan Hd. Tapping-3 +M2.0x5	1
		Screw, Pan Hd. Tapping-3 +M2.5x10	1
		Screw, Bind Hd. Tapping-3 +M2.0x6	2
		Nut-2 M8.0	1
		E Ring M1.9	2
		E Ring M2.0	1
		E Ring M3.0	1

NOTES: 1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

EXPLODED VIEW

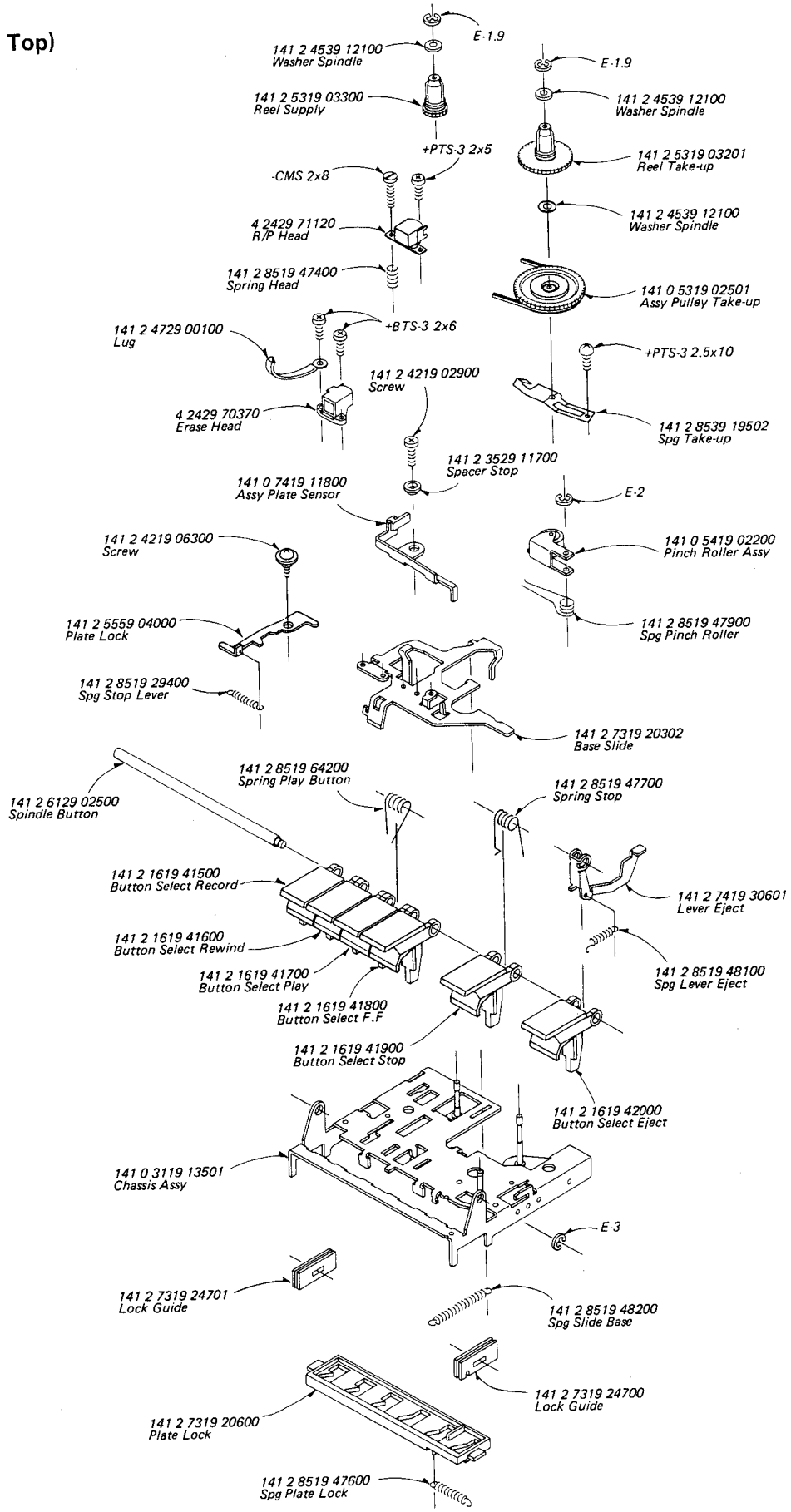
(Cabinet)



Parts marked with * are included in Cabinet Top Assy. (141 0 1119 47201 0)

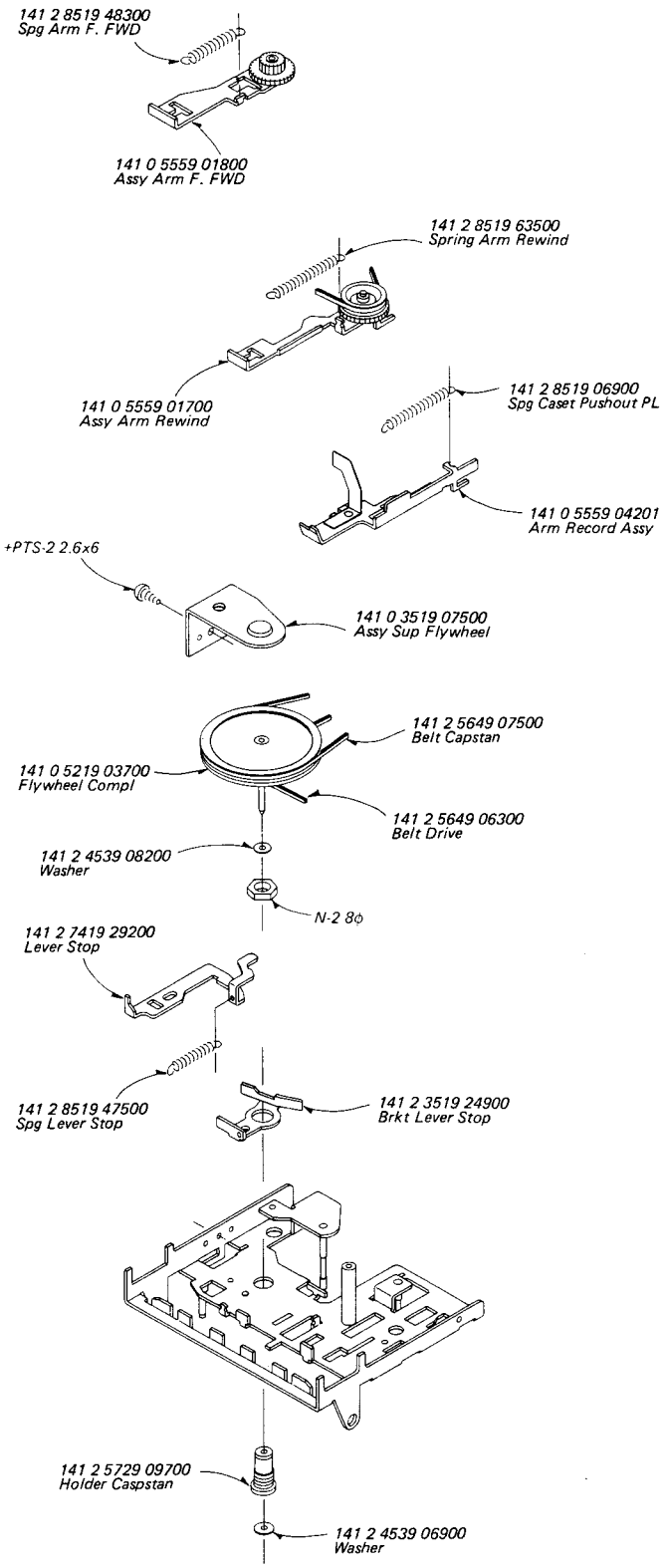
EXPLODED VIEW (Continued)

(Chassis Top)

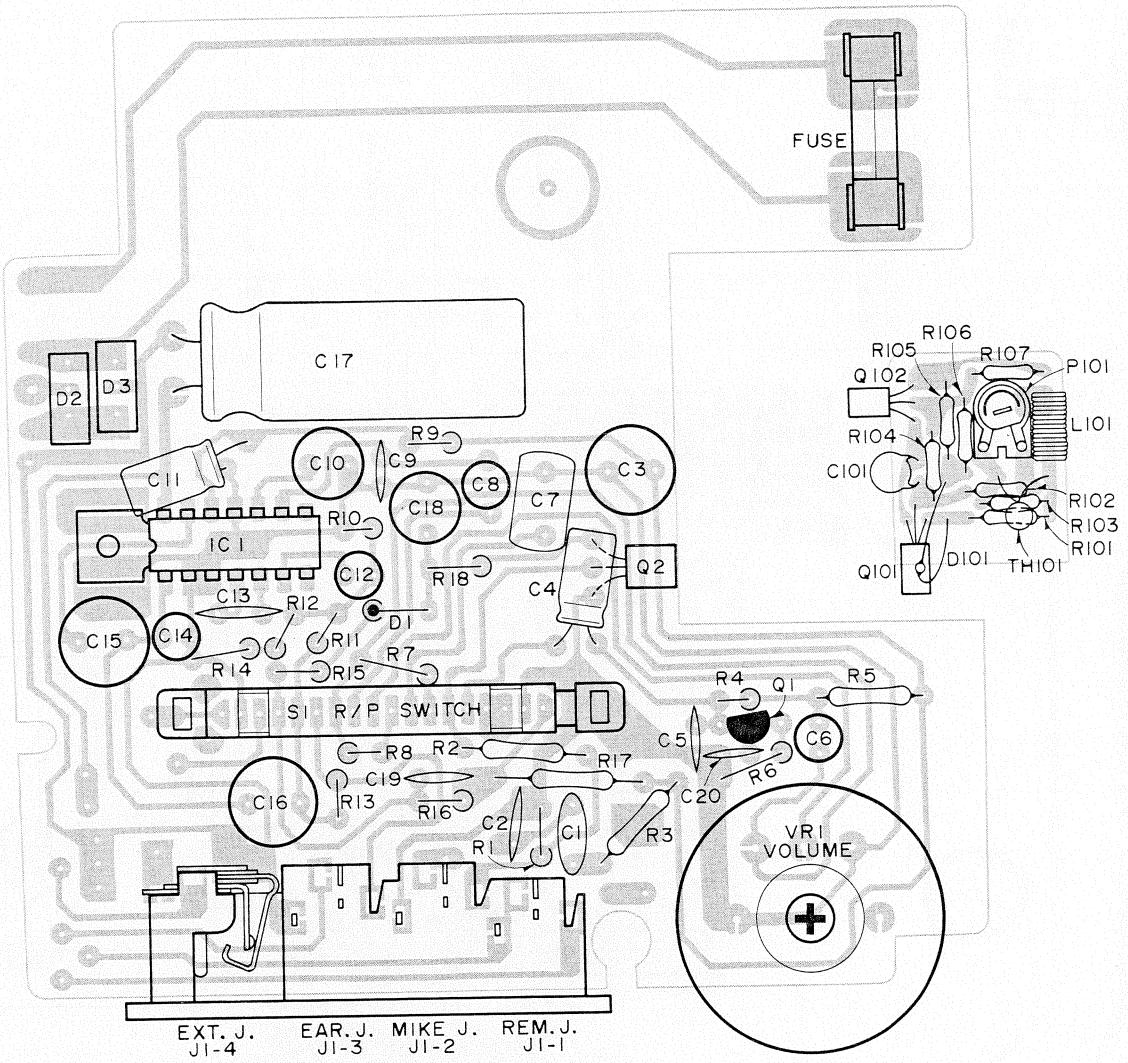


EXPLODED VIEW (Continued)

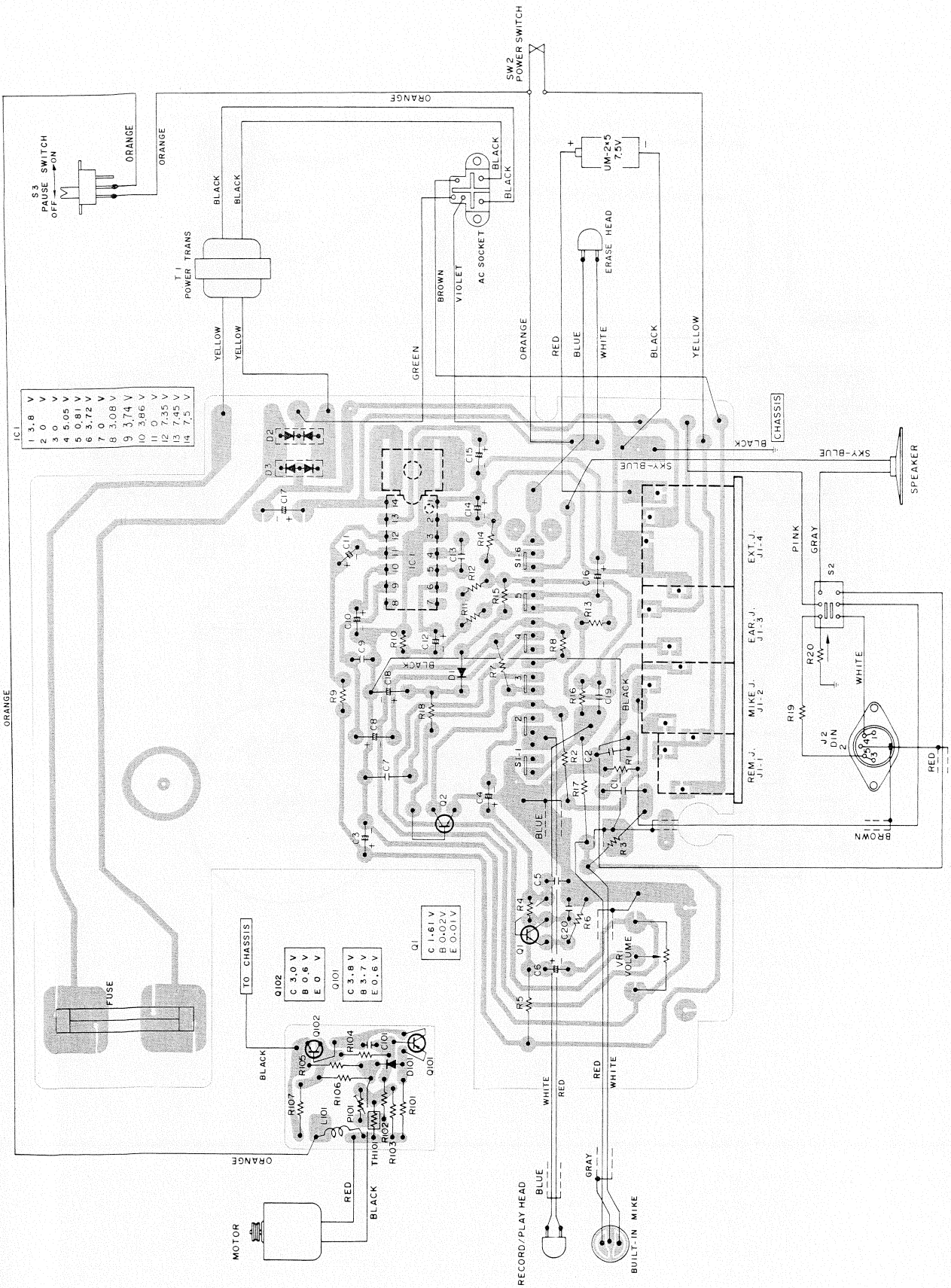
(Chassis Bottom)



PARTS LOCATION



WIRING DIAGRAM



SCHEMATIC DIAGRAM